

PATENT ABSTRACTS OF JAPAN

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(54) METHOD FOR MANUFACTURING TONER, MASTER BATCH PIGMENT, COLOR TONER,
METHOD FOR MANUFACTURING COLOR TONER, METHOD FOR FORMING IMAGE AND
IMAGE FORMING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To improve the coloring degree and transparency as well as to obtain electrification stability in a high temperature environment.

SOLUTION: The toner is prepared by using a dry powdery pigment as the pigment and by adding water to mix the dry powdery pigment and a binder resin to obtain a mixture, then heating and kneading the mixture to remove the water added during mixing. The mixture is kneaded in such a manner that the mixture shows 0.01 to 5.0% weight reduction by drying at 110° C and ≤0.5% weight reduction by drying at 70° C after kneaded.

マスターバッチ原料 (1) の電荷分布画像



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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] It is the manufacture approach of the toner using masterbatch kneading which distributes a pigment in resin. The toner which removed the water which carried out heating kneading of the mixture which added water and was obtained, and was added at the time of mixing, and was obtained, using a desiccation fine-particles pigment as said pigment when mixing binding resin with this desiccation fine-particles pigment. The manufacture approach of the toner which the loss on drying in 110 °C after kneading is 0.01 - 5.0%, and is characterized by kneading so that the loss on drying in 70 degrees C may become 0.5% or less.

[Claim 2] 110 °C loss on drying [in / the loss on drying in °C is 0.01 - 1.0%, and / 70 degrees C] is 0.05%. The manufacture approach of the toner according to claim 1 characterized by kneading so that it may become the following.

[Claim 3] The masterbatch kneading process which carries out melting kneading of the raw-material mixture which contained binding resin, a pigment, and water at least. So that it may become the pigment concentration of a request of the kneading object obtained at this masterbatch kneading process of a toner Congener. Or it is the approach of having the dilution kneading process diluted with binding resin of a different kind, grinding the kneading object obtained at this dilution kneading process, and manufacturing a color toner. A desiccation fine-particles pigment is used as a pigment used at said masterbatch kneading process. The toner which removed the water which carried out heating kneading of the mixture which added water and was obtained, and was added at the time of mixing, and was obtained when mixing said binding resin with this desiccation fine-particles pigment. The manufacture approach of the toner which the loss on drying in 110 °C after kneading is 0.01 - 5.0%, and is characterized by kneading so that the loss on drying in 70 degrees C may become 0.5% or less.

[Claim 4] 110 °C loss on drying [in / the loss on drying in °C is 0.01 - 1.0%, and / 70 degrees C] is 0.05%. The manufacture approach of the toner according to claim 3 characterized by kneading so that it may become the following.

[Claim 5] The manufacture approach of the toner according to claim 3 characterized by pigment content being 40 - 60 % of the weight in said masterbatch pigment kneading process.

[Claim 6] The manufacture approach of the toner according to claim 3 characterized by the addition of the water added at the time of mixing being 10 - 50 % of the weight in said masterbatch pigment kneading process.

[Claim 7] The manufacture approach of the toner according to claim 3 characterized by electrical conductivity using the water below 1.0microS in said masterbatch pigment kneading process.

[Claim 8] The manufacture approach of the toner according to claim 3 characterized by using the pigment whose saturation water absorption is 20 - 100% in said masterbatch pigment kneading process.

[Claim 9] The manufacture approach of the toner according to claim 3 characterized by using polyol resin as binding resin in said masterbatch pigment kneading process.

[Claim 10] The manufacture approach of the toner according to claim 3 characterized by using polyester resin as binding resin in said masterbatch pigment kneading process.

[Claim 11] The manufacture approach of the toner according to claim 3 characterized by using the kneading machine of an open sand mold as a kneading machine used for said masterbatch pigment kneading process.

[Claim 12] The manufacture approach of a toner according to claim 11 that laying temperature (T) of said kneading machine is characterized by being the temperature conditions with which the following type is filled between the outflow initiation temperature (Tr) of binding resin.

$80 < Tr < 110$ (degree C)

$Tr - 20 < T < Tr + 50$ (degree C)

[Claim 13] The manufacture approach of the toner according to claim 1 to 12 characterized by the outflow initiation temperature after said masterbatch kneading (Tm) kneading between the outflow initiation temperature (Tr) of binding resin so that the following formula may be filled.

$80 < Tr < 110$ (degree C)

$Tm > Tr + 20$ (degree C)

[Claim 14] 110 The masterbatch pigment characterized by for the loss on drying in ** being 0.01–5.0 %, and the loss on drying in 70 degrees C being 0.5% or less.

[Claim 15] 110 A loss on drying [in / the loss on drying in ** is 0.01–1.0 %, and / 70 degrees C] is 0.05%. Masterbatch pigment characterized by being the following.

[Claim 16] The masterbatch pigment obtained by the manufacture approach of a toner according to claim 1 to 13.

[Claim 17] The color toner which carries out dilution kneading by congener or binding resin of a different kind, and is obtained by grinding the obtained kneading object using a masterbatch pigment according to claim 14 to 16 so that it may become the pigment concentration of a request of a toner.

[Claim 18] The manufacture approach of the color toner characterized by grinding the kneading object which has the dilution kneading process diluted with congener or binding resin of a different kind so that it may become the pigment concentration of a request of a masterbatch pigment according to claim 14 to 16 of a toner, and was obtained at this dilution kneading process.

[Claim 19] The image formation approach using a color toner according to claim 17.

[Claim 20] Image formation equipment using a color toner according to claim 17.

[Translation done.]